1: Krasheninnikov N-5 (1736-40) 1764 Kamchadal

We now come to conſider the rivers that fall into the Eaſt Sea from the mouth of the *Awatſcha*, towards the ſouth, to the *Kurilskaya Lopatka*; and from the *Kurilskaya Lopatka* into the *Penſchinska* ſea to the *Tegbil* and the *Puſtaia* rivers.

There are but few rivulets that interſect the country between the mouth of the *Awatſcha* and the *Lopatka*. The ridge of mountains, which divides *Kamtſchatka*, extends to the Eaſt Sea: the declivity is ſteep and craggy; and the gulphs and bays, which are formed by theſe mountains, afford a ſafe harbour for veſſels of any burthen in the worſt weather.

The *Kurilſkaya Lopatka*, which by the natives is called *Kapoore*, is the ſouthernmoſt point of the cape of *Kamtſchatka*, and divides the eaſtern from the *Penſchinska* ſea: it takes its name from its reſemblance to a man's ſhoulder-blade. Mr. *Steller*, who has been upon the *Lopatka*, ſays, that the place is not more than 10 fathoms above the ſurface of the ſea, and for that reaſon is ſubject to great inundations, ſo that for 20 verſts from thence no-body lives, except thoſe who come there in the winter to catch foxes; and when the ice is carried thither with the beavers on it, then the *Kuriles*, who follow this ice along the ſhore, aſſemble here in great multitudes. Within three verſts from the *Lopatka* nothing grows except moſs; and there are neither rivers nor ſprings, only a few lakes and pools. The ſoil conſiſts of two layers, the lower is ſtrong, and the upper ſpongy; and its ſurface is full of hillocks, and uſeleſs. The firſt rivulet falling into the *Penſchinſka* ſea, is called the *Utatumpit*; two verſts from the *Utatumpit*, the rivulet *Tapgutpan* runs into the ſea, upon which ſtands a ſmall fort called *Kochinskoy*; and three verſts from thence is the *Pitpuy*, or *Ozernaya*, which runs out of a conſiderable lake divided from the ſea by a mountain. The *Ruſſians* call this river *Kambala*, or Flounder River, becauſe great numbers of flounders are caught in the mouth of it.

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THE NATURAL HISTORY OF

KAMTSCHATKA.

PART II.

CHAP. I.

Of the SOIL.

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UPON the banks of the river *Kamtſchatka* is found plenty of roots and berries, which in ſome meaſure ſupply the want of corn. There is alſo wood ſufficient not only for building houſes, but even for ſhip-building; and Mr. *Steller* is of opinion, that near the head of this river, both ſummer and winter corn would grow as well as in any other places in the ſame latitude, the ſoil being deep and rich; and though ſnow falls in very great quantities, yet it thaws early enough, and the ſpring is not ſo rainy, nor have they ſuch damps, there as in many other places. Several tryals of ſummer-corn have been actually made both in the upper and lower *Oſtrog* * of *Kamtſchatka*; in which both barley and oats have ſucceeded. At the monaſtery of our Lord of *Jakutſki*, they have

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* *Oſtrog* is a little town fortified with palliſades, where the *Ruſſian* Coſſacks, and other inhabitants live.

1: Krasheninnikov N-5 (1736-40) 1764 Kamchadal

134/241 ſeveral years paſt ſown ſeven or eight poods † of barley, which yielded a crop not only ſufficient for groats and meal for their own uſe, but even enough to ſupply their neighbours, though they are obliged to plough their land with men.

All garden ſtuff thrives not alike; the moſt ſucculent produce only leaves and ſtalks. Cabbage and lettice never grow to any head, and the peas continue in flower until late in the harveſt without yielding ſo much as pods; but garden roots which are full of juice, ſuch as turnips and radiſhes, grow very well. Theſe tryals, however, were only made upon the banks of the Great River and *Awatſcha*. Such things as require a hot ſoil, grow very well every where, but ſtill beſt upon the *Kamtſchatka*. Upon the Great River I never ſaw any turnips larger than three or four inches diameter; but upon the *Kamtſchatka*, I have ſeen them four or five times as big.

137 The graſs grows here ſo high, and is ſo full of ſap that one ſcarcely ſees any thing like it in all the empire of *Ruſſia*; near the river and lakes, and in the opening of the woods, it riſes to above the height of a man, and ſo faſt that it may ſometimes be mowed thrice in a ſummer; ſo that few places can be more proper for breeding of cattle; and although the blades are thick and high, and make but a coarſe ſort of hay, yet the cattle are large and fat, and give plenty of milk both ſummer and winter, which I attributed to the richneſs of the ſoil and the ſpring rains. The graſs continues full of juice, even to the beginning of winter, which being condenſed by the cold prevents the graſs from turning hard during that ſeaſon. As the graſs is ſo high and thick, a great deal of hay may be made upon a ſmall ſpot; and the cattle can find food in the fields all the winter. The places where 132 the graſs thus grows are never ſo much covered with ſnow as the bogs and ſwamps, and for this reaſon it is difficult to travel over them in the winter.

† A pood is a *Ruſſian* weight of 40 lb.

In

1: Krasheninnikov N-5 (1736-40) 1764 Kamchadal

In other places lying upon the Eaſtern Ocean, either to the N. or S. of *Kamtſchatka*, there is no land fit for culture; for all that is near the ſhore is either ſandy, ſtony, or boggy, and the banks are ſo narrow, that if the ground was good, yet there is not enough for agriculture; and there are but very little hopes of the land about the *Penſchinſka* ſea anſwering better, eſpecially for winter-corn, it being all marſhy and boggy. At ſome diſtance from the ſea are found woody places which are dry and high, and appear not improper for corn; but the ſnow which falls in the beginning of the harveſt before the earth is frozen, and lies generally deep upon theſe places 'till the middle of *May*, both prevents the ſowing of the ſummer-corn, and deſtroys the winter-corn; and, becauſe at the thawing of the earth the corn would be blaſted by the evening froſts, it is impoſſible to ſow any before the middle of *June*; after which time to *Auguſt* are continual rains, ſo that ſometimes the ſun is not ſeen for fourteen days together: this would cauſe the corn to grow very high and full of juice; but, for want of warm and dry weather, it would never ripen. Notwithſtanding, Mr. *Steller* thinks, that if the ground was properly prepared, oats and barley might ripen there; but this is much to be doubted, until, at leaſt, further tryal can be made; for I have myſelf ſeveral times ſown barley upon the Great River, and it grew well in thickneſs, height, and ſtrength of blade 'till the beginning of *Auguſt*, when, juſt as the ear was putting forth, all of it was deſtroyed by the froſt.

All theſe barren places, not only near the *Penſchinſka* ſea, but even within the land, appear to be compoſed of earth brought from other parts. This one may diſcover by the different ſtrata, and perceive how they have encreaſed yearly on the banks of the rivers, which are high, and on the cliffs that are bare. I have ſeen hanging out of the earth, trees which are not to be found in that country, more than ſeven feet deep under the ſurface. Hence it may be concluded, that all theſe barren, boggy places, where at

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134 preſent are no woods, but only ſhrubs, and ſtunted ſallows, and birches, were formerly covered with water, which has decreaſed by degrees here, as it has upon the north-eaſtern coaſt. Below the earth lies a bed of pure ice, extremely hard; and under that a ſoft wateriſh clay, with gravel; this continues from the ſea up to the very mountains, and will ſufficiently account for the barrenneſs of theſe parts. But, though the land is not every where fit for agriculture, yet ſome places upon the river *Kamtſchatka* (which have been already mentioned) and along the *Biſtroy* river, are ſufficient to furniſh with corn, not only the inhabitants, but alſo the neighbouring parts. It is however to be feared, that the burning of the woods, in order to clear the lands, may drive away the ſables, who have a particular averſion to ſmoke: this happened upon the river *Lena*, formerly the beſt hunting country, but now deſerted by theſe animals.

137 The ſcarcity of wood is a great inconvenience, both the *Ruſſians*
313 and natives being obliged to fetch it twenty or thirty verſts with
489 great trouble and loſs of time, for the neceſſary uſes of boiling their ſalt and curing their fiſh: and it is very difficult to bring it down in floats, becauſe the current is rapid and ſo ſhallow, that they can bring only two little bundles on each ſide of a ſmall fiſhing-boat; otherwiſe they would obſtruct themſelves in the management of their boat, and thereby run the riſk of being driven upon the rocks, ſand-banks, and trunks of trees, where not only their boat and wood, but frequently the people themſelves are loſt. Sometimes the ſcarcity of wood is ſupplied by ſuch as is thrown up by the ſea, which the inhabitants gather upon the ſhore; but this wood that has been ſoaked in the water, although they are at great pains to dry it, never burns clear, but ſmothers away with a continual ſmoke very hurtful to the eyes.

137 At the diſtance of 30 or 40 verſts from the ſea, and near the
313 heads of the rivers, grow birch-trees, alder, and poplar; of which the people build their houſes and make their boats. But this

27: Sauer--290 T-2 (1789-93) 1802 Kamchadal
116, 133, 134, 135

"From this place [CMC: i.e., north of the village of Apoushinsk, from which point the Kamchatka River is navigable by small craft] the face of the country assumes the appearance of extreme fertility. The valley widens, and the space between the mountains east and west is at Virchni Kamtshatka 40 miles. The soil is deep and rich, composed of black earth, mixed with fine black ashes from the burning mountains, and fine iron sand, which adheres to a magnet, and forges well with bar-iron, but used alone is very brittle."

27: Sauer--292 [2] T-2 (1789-93) 1802 Kamchadal
116, 133, 134

"As you approach the north [CMC: of the Kamchatka Peninsula], the severity of the climate increases; the soil becomes sandy and stoney; and the vegetable productions are stunted and weak. The isthmus is situated in latitude 59° 20', and the distance from sea to sea is here about 40 miles. The widest part is from Kronotskoi Noss to the river Itsha, about 220 miles."

"Hot springs are very numerous, and seem scattered all over Kamtshatka; but those in the following places are the most remarkable:

Opalski, or Osernoi, situated nearly midway between the Lopatka and Bolshoiretsk, about 15 miles south of the Kamtshadal village of Yavinsk, surrounded by mountains, and at no great distance from the volcano of Opalsk. They occupy a valley of considerable extent, and are scattered to the distance of six miles, some parts of which produce detached birch trees, the sweet plant, &c.; but in general the soil is barren, composed of different coloured marl, and large stones which appear to have been scattered by eruptions of some volcano. The largest hot spring is at the foot of one of the mountains; and we heard the noise that it made at the distance of near a mile before we came to it. It is about six fathom in circumference, boiling up to a considerable height; the middle appears like a cauldron; and a piece of beef placed in it was very well boiled in a short time: all around it bubbles up between large stones; it then divides into two streams, which descend over stones, and unite at the bottom with a small rivulet formed by the other springs to the north: they flow a little way to the south, then turn westward into the lake Osernoi. About the border of these springs, and the rivulet which they form, we observed petrified, or rather calcarised, foliage of the sweet plant, birch leaves, sticks, &c. of a beautiful whiteness; but so extremely delicate in their texture, that we could not preserve any, even in cotton; for they mouldered to dust. The Kamtshadals suppose this to be the habitation of some demon, and make a

trifling offering to appease his wrath; without which, they say, he sends very dangerous storms. Our naturalist and Mr. Varonin, who ascended to these springs in 1790, experienced [304] a whirlwind, which tore their tent, and scattered its contents about, many of which were never found again. Ashes were scattered upon the snow about four inches deep, resembling coarse gunpowder, probably from the volcano Alaid (a solitary mountain in the sea, situated about 20 miles south-west of the Lopatka), which burns violently at this time(February 1793). It has at various intervals emitted smoke ever since 1790. The oldest inhabitant does not remember its having done so before, although tradition informs them of its violent eruptions."

27: Sauer--304 T-2 (1789-93) 1802 Kamchadal
116, 133, 134

"Toward the source of the Bystria, near the village Malka, are hot springs, a little way up the ascent of one of the mountains, which boil out of the earth in two or three places about a foot wide. Similar springs are seen near the village Natsheke, but more extensive, and forming in their run several convenient bathing-places. These have a sulphureous smell; and the stones taken from the bottom of the openings, where the springs appear, are covered with a shining thin coat, which resembles silver at first, but gets dull and of a dark colour after it has been sometime exposed to the air: the surrounding earth, to the distance of 20 fathoms in every direction, is warm, replete with empty shells like those of snails, and a transparent glutinous substance; as also with spots of loam, whereon any thing heavy being thrown sinks immediately. South of these springs, about the distance of 30 versts, at the source of the river Natsheke, is a sandy level spot, with several hot springs, the water of which is said to be brackish."

29:Cochrane T-2(1821-22)1824 Kamchadal

000 extinct, and with them the very being of the Yakuti, who are even now going down in an equal ratio.

231 R 177 .23 Much benefit has been derived to the colony from the exertions of the present Chief, Captain Rikord. The rule of never allowing a cow to be killed until she is past calving, is in itself excellent, but the stock on hand is so small that a century would elapse before what can be termed herds of cattle could be seen wandering and feasting upon the almost unbounded pastures of the peninsula. What the different chiefs have been doing for the last fifty years, Heaven alone knows! When Captains King and Clarke were here, they seem to have taken it for granted, or to have been informed, that cattle of all descriptions were in a flourishing state. From the proximity of Okotsk to Tygil, a couple of transports might, in one summer, transport at least one thousand head of cattle, which, repeated for ten years, would place the peninsula in an absolutely enviable situation. This act of humanity would be attended with no expense to the government; the Kamtchatdales would willingly pay the value in sables, and the result would be, that no part of the vast Russian empire would be richer or better provided with food of various descriptions than the distant province of Kamtchatka.

134 241 R 177 .24 Upon the banks of the Kamtchatka, where the land lies distant from the salt water, and sheltered by the mountains from the east winds; as well as

29:Cochrane T-2 (1821-22)1824 Kamchadal

134 on those banks which have been enriched by the
241 lava emitted by the volcanoes, barley, oats, and
R rye have been produced, but in no instance with
177 so much success as to pay the labour. The pro-
.24 ductions, it is true, have been a little more varied and a little riper, but rarely consumable. In spite of this fact, the gazettes of St. Petersburgh formally and officially announce this year that a quartern of rye produced nine quarterns, and that the size or weight of a common potatoe was three quarters of a pound. Three quarters of an ounce would be a sufficient tax upon credulity: I have no hesitation in saying that both these reports are fabulous in every sense of the word, for I have never seen a potatoe in the whole province either ripe, or larger than a hen's egg.

If large herds of cattle were distributed on the banks of the Kamtchatka, and other favoured places, with the benefit of manure, agricultural implements, and knowledge, no doubt the soil might be made to answer the purpose. I certainly cannot conceive the climate of Kamtchatka to be such, as of itself to preclude the pursuit of agriculture in some of its minor branches, as I consider the soil to be much superior to that of Connecticut, or Massachusetts, or either of our Canadas.

231 In the vicinity of Avatcha are to be seen, what are by some termed artificial enclosures, within which cattle were formerly maintained, but I conclude them to be natural enclosures formed by the

29:Cochrane T-2 (1821-22) 1824 Kamchadal

291 237 132 134 231 the inhabitants make their parkas and all their warm clothing, which are also exceedingly comfortable and beautiful. The climate of the islands resembles that of St. Peter and St. Paul's. The soil is generally good, producing fine pastures. On the first isle there was formerly an abundance of cattle, but now only two cows remain.

133 161 651 R 177 .65 The second island, about ninety miles from the first, has seven yourtes, with thirty-five males and forty-two females, paying tribute for itself and the fourteenth isle, nominally, thirty-five sea-otters; that is, twenty-three foxes and one hundred and fifty roubles. The fourteenth isle has three yourtes, fifteen males, and seventeen females. Of the intermediate islands, and those beyond the fourteenth, I could obtain but very little information; the whole are evidently volcanic productions, and are supposed to have been separated by some violent convulsion of nature from the peninsula of Kamtchatka. The islands, which are lofty and bold, are said to be without rivers, nor are there any harbours known. It is to be remembered, however, that they have been but very imperfectly surveyed. The inhabitants are supposed

101 107 302 651 R 177 .65 to be of the same origin as those of Kamtchatka, though they differ in the custom of wearing long beards, which was probably introduced among them by the Russians. Their dialect is the same with that of the inhabitants near Cape Lopatka; from whence baidares are frequently sent to the first and second isle, to bring the tribute and furs. [the Kurils--Analyst]